

REMARKS

Claims 1-8, 17, 19, and 20 are presented for further examination. Claims 1 and 20 have been amended.

In the final Office Action mailed January 2, 2003, the Examiner rejected claims 1-8 and 20 under 35 U.S.C. § 102(b) as anticipated by newly-cited U.S. Patent No. 4,980,747 ("Hutter et al."). Claims 20 was further rejected under 35 U.S.C. § 102(b) as anticipated by Meyer, U.S. Patent No. 5,665,633, which is of record. Claims 17 and 19 were allowed.

Applicant respectfully disagrees with the bases for the rejections and requests reconsideration and further examination of the claims.

In the disclosed and claimed embodiments of the invention, a trench structure is provided that includes a plurality of trenches, each trench having an open bottom and a sidewall lined with oxide only. Each trench is further filled with a conductive material to form a contact region that is in direct contact with one of the substrate and the buried layer in which it is formed.

Hutter et al., U.S. Patent No. 4,980,747, discloses a deep trench isolation with surface contact to substrate. Hutter et al. teaches a process sequence that, while more complex than the process sequence of the present invention, yields a structure that is different than that disclosed and claimed in the present invention. More particularly, in viewing Figures 3-5 of Hutter et al., it is noticed that the process sequence utilizes applying two layers of nitride (layers 18 and 46) that are put into contact with each other to form a hard mask for etching a trench, and which are then removed from the surface while etching and perforating the trench by exploiting selectivity with respect to the dielectric material interposed between them. More particularly, one layer only, layer 18, is also deposited inside the trench. Thus, Hutter et al. teaches trench sidewalls that are formed with a sandwich layer of thin silicon dioxide (38) and nitride (18).

Thus, as recited in claim 1, an integrated device is provided that comprises a substrate having a buried layer and an epitaxial region formed therein, and an isolation structure adapted to define a plurality of isolation wells for integrating the components of the integrated device therein, the isolation structure comprising plural dielectrically insulated trenches, each trench *lined with oxide only* and having an open bottom, and each trench filled with a conductive

material to form a contact region that is in direct contact with one of the substrate and the buried layer. As discussed above, Hutter et al. teaches a different structure wherein each trench is lined with a sandwich layer of oxide and nitride. Applicant respectfully submits that claim 1 and dependent claims 2-8 are clearly allowable over Hutter et al.

Claim 20 now includes a recitation that each trench has sidewalls lined with *a single insulating dielectric material* that defines a central cavity *having an open bottom*. Nowhere does Meyer teach a trench structure having an open bottom. Nowhere does Hutter et al. teach a single dielectric insulating material lining the sidewalls of each trench. In view of the foregoing, applicant submits that claim 20 is clearly allowable.

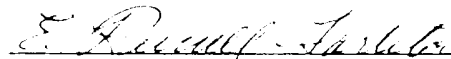
Applicant submits that all of the claims in this application are now in condition for allowance. In the event the Examiner finds minor informalities that can be resolved by telephone conference, the Examiner is urged to contact applicant's undersigned representative by telephone at (206) 622-4900 in order to expeditiously resolve prosecution of this application. Consequently, early and favorable action allowing these claims and passing this case to issuance is respectfully solicited.

The Commissioner is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

Respectfully submitted,

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